10/033,195

=>
=> s photolabil? (3a) protect? (4a) group?
L5 976 PHOTOLABIL? (3A) PROTECT? (4A) GROUP?

=> s l5 AND nucleoside?
L6 412 L5 AND NUCLEOSIDE?

=> s l6 and synthesis
L7 393 L6 AND SYNTHESIS

=> s l7 and nucleoside? (5a) photolabil?
L8 57 L7 AND NUCLEOSIDE? (5A) PHOTOLABIL?

=> dup rem l8
PROCESSING COMPLETED FOR L8
L9 52 DUP REM L8 (5 DUPLICATES REMOVED)

=> d l9 bib abs 1-52

L9 ANSWER 1 OF 52 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 2004:307652 BIOSIS
DN PREV200400311241
TI **Nucleoside** derivatives with **photolabile protective groups.**
AU Pfleiderer, Wolfgang [Inventor, Reprint Author]; Buhler, Sigrid [Inventor]; Giegrich, Heiner [Inventor]
CS Constance, Germany
ASSIGNEE: Nigu Chemie GmbH, Waldkraiburg, Germany
PI US 6750335.June 15, 2004
SO Official Gazette of the United States Patent and Trademark Office Patents, (June 15 2004) Vol. 1283, No. 3. http://www.uspto.gov/web/menu/patdata.htm l. e-file.
ISSN: 0098-1133 (ISSN print).
DT Patent
LA English
ED Entered STN: 7 Jul 2004
Last Updated on STN: 7 Jul 2004
AB The invention relates to **nucleoside** derivatives with **photolabile protecting groups** of general formula (I) ##STR1## wherein R1 is H, F, Cl, Br, I, or NO2 ; R2 is H or CN, provided that R1 and R2 are not simultaneously H; R3 is H, 1-4 C alkyl, or phenyl; R4 is H or a conventional functional group for the **synthesis** of oligonuleotides; R5 is H, OH, halogen or XR6, where X=O or S, and R6 is a conventional nucleotide protecting group; and B is adenine, cytosine, guanine, thymine, uracil, 2,6-diaminopurin-9-yl, hypoxanthin-9-yl, 5-methylcytosin-1-yl, 5-amino-4-imidazolcarboxamid-1-yl or 5-amino-4-imidazolcarboxamid-3-yl, where, if B is adenine, cytosine or guanine the primary amine functionality, optionally, carries a permanent protecting group. Furthermore, these derivatives may be used for the light-controlled **synthesis** of oligonucleotides on a DNA chip.

L9 ANSWER 2 OF 52 WPIDS COPYRIGHT 2004 THE THOMSON CORP on STN
AN 2004-652909 [63] WPIDS
DNC C2004-233611
TI New photolabile compounds useful for removing **photolabile protecting group** or for light controlled **synthesis** of oligonucleotides.
DC B04 B05 D16
IN BUHLER, S; OTT, M; PFLEIDERER, W; BUEHLER, S
PA (NIGU-N) NIGU CHEM GMBH

CYC 108
PI WO 2004074300 A2 20040902 (200463)* EN 67
RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE
LS LU MC MW MZ NL OA PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE
DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG
KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ
OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG
US UZ VC VN YU ZA ZM ZW
US 2004175741 A1 20040909 (200463)
ADT WO 2004074300 A2 WO 2004-EP50158 20040219; US 2004175741 A1 Provisional US 2003-449070P 20030221, US 2004-764989 20040126
PRAI US 2004-764989 20040126; US 2003-449070P 20030221
AN 2004-652909 [63] WPIDS
AB WO2004074300 A UPAB: 20041001
NOVELTY - New photolabile compounds are new.
DETAILED DESCRIPTION - New photolabile compounds of formula (I), are new.
R1 = U1 or U2;
U1 = COOY;
Y = an optionally substituted 1-10C alkyl group;
U2 = 1-4C alkyl or 1-4C alkoxy (both optionally substituted), H, NO2, CN, OCH3 or halo;
R2 = U2 or U3;
U3 = (hetero)aryl or aroyl (both optionally substituted);
R3 = H, NO2 or halogen;
R4 = H, OCH3 or an optionally substituted 1-4C alkyl;
R9 = H or -C(=X)-Z;
X = oxygen or sulfur;
Z = leaving group, an O-atom of a hydroxyl group or a N-atom of an amino group or a compound comprising the **photolabile protective group** (preferably deoxyribonucleoside or a ribonucleoside of formulae (II) or (III), especially chemically modified deoxyribonucleoside, ribonucleoside or their analogs);
R5 = H, an oligonucleotide or a functional group useful in oligonucleotide **synthesis**;
R6 = 1-4C alkoxyl or alkenoxyl (both optionally substituted), H, OH or WR8;
W = oxygen or sulfur;
R8 = protective group useful in oligonucleotide **synthesis**;
B = T1; and
T1 = adenine, cytosine, guanine, thymine, uracil or its chemical modifications (where in the case of adenosine, cytosine and guanine, the amino functions on the heterocycle bear a protective group useful in oligonucleotide **synthesis**).
Provided that when R1 is U1, then R2 is U2, and when R1 is U2, then R2 is U3.
INDEPENDENT CLAIMS are included for the following:
(1) preparation of (I);
(2) use of (I) for light controlled **synthesis** of oligonucleotides, effected on a solid support; and
(3) removing a **photolabile protective group** having formula (Ia) by irradiating a compound including the protective group.
USE - For removing **photolabile protecting group** or for light controlled **synthesis** of oligonucleotides (claimed). Also useful as photocleavable protective groups e.g. in **synthesis** of high density arrays of oligonucleotides on solid support; in the light-directed **synthesis** of oligonucleotides or its nucleic acid microarrays.
ADVANTAGE - The compounds **protects nucleoside** derivatives comprising **photolabile protective**

groups; provides **protecting groups**, having improved deprotection properties, suited for both the 3'-OH- and 5'-OH function of the sugar moiety of **nucleoside** derivatives; exhibit improved deprotection properties which provide faster deprotection times and enhanced conversion rates, while producing lower levels of side products; improved deprotection properties allowing for significantly accelerated array assembly and enhanced oligonucleotide quality. The protective groups are specifically adapted to dry or wet deprotection conditions to allow high-throughput and high-quality array fabrication independent of the deprotection approach used.
Dwg.0/0

L9 ANSWER 3 OF 52 USPATFULL on STN
AN 2004:254325 USPATFULL
TI Two-stage protective groups for the **synthesis** of biopolymers
IN Guimil, Ramon, Heidelberg, GERMANY, FEDERAL REPUBLIC OF
Scheffler, Matthias, Hirschberg/Leutershausen, GERMANY, FEDERAL REPUBLIC OF
Stahler, Peer F., Mannheim, GERMANY, FEDERAL REPUBLIC OF
Beijer, Barbro, Nussloch, GERMANY, FEDERAL REPUBLIC OF
PI US 2004197851 A1 20041007
AI US 2004-482744 A1 20040105 (10)
WO 2002-EP7389 20020703
PRAI DE 2001-132025 20010703
US 2001-314306P 20010824 (60)
DT Utility
FS APPLICATION
LREP ROTHWELL, FIGG, ERNST & MANBECK, P.C., 1425 K STREET, N.W., SUITE 800, WASHINGTON, DC, 20005
CLMN Number of Claims: 21
ECL Exemplary Claim: 1
DRWN 8 Drawing Page(s)
LN.CNT 1002
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to a method for the **synthesis** of biopolymers by gradual breakdown from protected **synthesis** building blocks carrying two-stage protective groups. The two-stage protective groups are split by means of a first exposure step and a subsequent chemical treatment step.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 4 OF 52 USPATFULL on STN
AN 2004:247229 USPATFULL
TI Process for the **synthesis** of pyrazolopyrimidines
IN Dempcy, Robert O., Kirkland, WA, UNITED STATES
Adams, A. David, Snohomish, WA, UNITED STATES
Reed, Michael W., Seattle, WA, UNITED STATES
Belousov, Yevgeniy S., Mill Creek, WA, UNITED STATES
PA Epoch Biosciences, Inc., Bothell, WA (U.S. corporation)
PI US 2004191824 A1 20040930
AI US 2004-816747 A1 20040401 (10)
RLI Continuation of Ser. No. US 2001-954624, filed on 12 Sep 2001, PENDING
DT Utility
FS APPLICATION
LREP TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
CLMN Number of Claims: 43
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1015
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a **nucleoside** comprising a pyrazolopyrimidine base and a process for producing the same. In particular, the processes of the present invention comprises using a halogenated pyrazolopyrimidine base and removing the halogen after the base is coupled to a sugar moiety. The presence of the halogen on the **nucleoside** base allows facile and economical production of a large quantity of **nucleosides**.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 5 OF 52 USPATFULL on STN
AN 2004:239660 USPATFULL
TI Massive parallel method for decoding DNA and RNA
IN Ju, Jingyue, Englewood Cliffs, NJ, UNITED STATES
Li, Zengmin, New York, NY, UNITED STATES
Edwards, John Robert, New York, NY, UNITED STATES
Itagaki, Yasuhiro, New York, NY, UNITED STATES
PA The Trustees of Columbia University in the City of New York. (U.S. corporation)
PI US 2004185466 A1 20040923
AI US 2003-702203 A1 20031106 (10)
RLI Division of Ser. No. US 2001-972364, filed on 5 Oct 2001, GRANTED, Pat. No. US 6664079 Continuation-in-part of Ser. No. US 2000-684670, filed on 6 Oct 2000, ABANDONED
PRAI US 2001-300894P 20010626 (60)
DT Utility
FS APPLICATION
LREP John P. White, Cooper & Dunham LLP, 1185 Avenue of the Americas, New York,, NY, 10036
CLMN Number of Claims: 60
ECL Exemplary Claim: 1
DRWN 28 Drawing Page(s)
LN.CNT 1872
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides methods for attaching a nucleic acid to a solid surface and for sequencing nucleic acid by detecting the identity of each nucleotide analogue after the nucleotide analogue is incorporated into a growing strand of DNA in a polymerase reaction. The invention also provides nucleotide analogues which comprise unique labels attached to the nucleotide analogue through a cleavable linker, and a cleavable chemical group to cap the --OH group at the 3'-position of the deoxyribose.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 6 OF 52 USPATFULL on STN
AN 2004:227355 USPATFULL
TI Novel **photolabile protective groups** for improved processes to prepare oligonucleotide arrays
IN Buhler, Sigrid, Waldkraiburg, GERMANY, FEDERAL REPUBLIC OF
Ott, Markus, Kraiburg, GERMANY, FEDERAL REPUBLIC OF
Pfleiderer, Wolfgang, Konstanz, GERMANY, FEDERAL REPUBLIC OF
PA NIGU Chemie GmbH, Waldkraiburg, GERMANY, FEDERAL REPUBLIC OF (non-U.S. corporation)
PI US 2004175741 A1 20040909
AI US 2004-764989 A1 20040126 (10)
PRAI US 2003-449070P 20030221 (60)
DT Utility
FS APPLICATION
LREP SWANSON & BRATSCHUN L.L.C., 1745 SHEA CENTER DRIVE, SUITE 330, HIGHLANDS RANCH, CO, 80129
CLMN Number of Claims: 29

ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 2331
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention discloses novel and improved nucleosidic and nucleotidic compounds that are useful in the light-directed **synthesis** of oligonucleotides, as well as, methods and reagents for their preparation. These compounds are characterized by novel **photolabile protective groups** that are attached to either the 5'- or the 3'-hydroxyl group of a **nucleoside** moiety. The **photolabile protective group** is comprised of a 2-(2-nitrophenyl)-ethyoxycarbonyl skeleton with at least one substituent on the aromatic ring that is either an aryl, an aroyl, a heteroaryl or an alkoxycarbonyl group. The present invention includes the use of the aforementioned compounds in light-directed oligonucleotide **synthesis**, the respective assembly of nucleic acid microarrays and their application.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 7 OF 52 USPATFULL on STN
AN 2004:152458 USPATFULL
TI **Photolabile protective groups** for the **synthesis** of biopolymers
IN Beier, Markus, Heidelberg, GERMANY, FEDERAL REPUBLIC OF
PI US 2004116680 A1 20040617
AI US 2004-470939 A1 20040120 (10)
WO 2002-EP1187 20020205
PRAI DE 2001-105079 20010205
DT Utility
FS APPLICATION
LREP ROTHWELL, FIGG, ERNST & MANBECK, P.C., 1425 K STREET, N.W., SUITE 800, WASHINGTON, DC, 20005
CLMN Number of Claims: 14
ECL Exemplary Claim: 1
DRWN 2 Drawing Page(s)
LN.CNT 231
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to **photolabile protective groups** for synthesizing biopolymers, in particular nucleic acids.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 8 OF 52 USPATFULL on STN
AN 2004:120982 USPATFULL
TI Porous silica substrates for polymer **synthesis** and assays
IN Glazer, Marc I., Stanford, CA, UNITED STATES
Fidanza, Jacqueline A., San Francisco, CA, UNITED STATES
McGall, Glenn, Mountain View, CA, UNITED STATES
Frank, Curtis W., Cupertino, CA, UNITED STATES
Vinci, Richard, Easton, PA, UNITED STATES
PA Affymetrix, Inc., Santa Clara, CA (U.S. corporation)
PI US 2004092396 A1 20040513
AI US 2003-700990 A1 20031104 (10)
RLI Division of Ser. No. US 2000-545207, filed on 7 Apr 2000, PENDING
PRAI US 1999-128402P 19990408 (60)
DT Utility
FS APPLICATION
LREP John P. Iwanicki, BANNER & WITCOFF, LTD, 28th Floor, 28 State Street, Boston, MA, 02109
CLMN Number of Claims: 48

ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 2159
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods are provided for making and using thin films of porous silica substrates to synthesize arrays of polymers. Methods are also provided for assaying such polymers on porous silica substrates. The porous silica substrates offer an increase in array density and signal enhancement over conventional flat glass substrates. Examples of polymers that can be synthesized and assayed include biological polymers such as nucleic acids, polynucleotides, polypeptides, and polysaccharides. Arrays of nucleic acids or polynucleotides can be used for a variety of hybridization-based experiments such as nucleic acid sequence analysis, nucleic acid expression monitoring, nucleic acid mutation detection, speciation, effects of drug therapy on nucleic acid expression, among others.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 9 OF 52 USPATFULL on STN
AN 2004:301921 USPATFULL
TI Porous silica substrates for polymer **synthesis** and assays
IN Glazer, Marc I., Stanford, CA, United States
Fidanza, Jacqueline A., Mountain View, CA, United States
McGall, Glenn, Mountain View, CA, United States
Frank, Curtis W., Cupertino, CA, United States
Vinci, Richard, Easton, PA, United States
PA Affymetrix, Inc., Santa Clara, CA, United States (U.S. corporation)
PI US 6824866 B1 20041130
AI US 2000-545207 20000407 (9)
PRAI US 1999-128402P 19990408 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Morris, Terrel; Assistant Examiner: Vo, Hai
LREP Banner & Witcoff, Ltd.
CLMN Number of Claims: 63
ECL Exemplary Claim: 46
DRWN 5 Drawing Figure(s); 5 Drawing Page(s)
LN.CNT 2218
AB Methods are provided for making and using thin films of porous silica substrates to synthesize arrays of polymers. Methods are also provided for assaying such polymers on porous silica substrates. The porous silica substrates offer an increase in array density and signal enhancement over conventional flat glass substrates. Examples of polymers that can be synthesized and assayed include biological polymers such as nucleic acids, polynucleotides, polypeptides, and polysaccharides. Arrays of nucleic acids or polynucleotides can be used for a variety of hybridization-based experiments such as nucleic acid sequence analysis, nucleic acid expression monitoring, nucleic acid mutation detection, speciation, effects of drug therapy on nucleic acid expression, among others.

L9 ANSWER 10 OF 52 USPATFULL on STN
AN 2004:161354 USPATFULL
TI **Nucleoside** derivatives with photo-unstable protective groups
IN Beier, Markus, Heidelberg, GERMANY, FEDERAL REPUBLIC OF
Honeisel, Jorg, Wiesloch, GERMANY, FEDERAL REPUBLIC OF
PA Deutsches Krebsforschungszentrum Stiftund des Offentlichen Rechts, Heidelberg, GERMANY, FEDERAL REPUBLIC OF (non-U.S. corporation)
PI US 6756492 B1 20040629
WO 2000061594 20001019

AI US 2002-958610 20020221 (9)
WO 2000-DE1148 20000407
PRAI DE 1999-19915867 19990408
DE 2000-10003631 20000128
DT Utility
FS GRANTED
EXNAM Primary Examiner: Riley, Jezia
LREP Halluin, Albert P., Kung, Viola T., Howrey, Simon, Arnold & White, LLP
CLMN Number of Claims: 8
ECL Exemplary Claim: 1
DRWN 16 Drawing Figure(s); 16 Drawing Page(s)
LN.CNT 925
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to **nucleoside** derivatives having **photolabile protective groups** of general formula (I) ##STR1##

in which

R.sup.1=H, NO.sub.2, CN, OCH.sub.3, halogen, an alkyl, alkoxy or alkoxyalkyl residue having 1 to 4 C atoms or an optionally substituted aryl residue or an aliphatic acyl residue having 2 to 5 atoms,

R.sup.2=H, NO.sub.2, CN, OCH.sub.3, halogen, an alkyl, alkoxy or alkoxyalkyl residue having 1 to 4 C atoms or an optionally substituted aryl residue or an aliphatic acyl residue having 2 to 5 atoms,

R.sup.3=H, halogen, NO.sub.2, CN, OCH.sub.3, an alkyl, alkoxy or alkoxyalkyl residue having 1 to 4 C atoms or an optionally substituted aryl residue or aliphatic acyl residue having 2 to 5 C atoms,

R.sup.4=H, halogen, NO.sub.2, CN, OCH.sub.3, an alkyl, alkoxy, or alkoxyalkyl residue having 1 to 4 C atoms or an optionally substituted aryl residue or aliphatic acyl residue having 2 to 5 atoms,

R.sup.5=H, dimethoxytrityl or a protective group common in the chemistry of nucleotides or a functional group common for the production of oligonucleotides,

R.sup.6=H, OH, halogen, or ΨR.sup.8, wherein Ψ=O or S and R.sup.8=alkyl or alkoxyalkyl having 1 to 4 C atoms or an optionally substituted aryl residue or an aliphatic acyl residue having 2 to 5 atoms and a protective group common in the chemistry of nucleotides,

R.sup.7=H, NO.sub.2, CN, OCH.sub.3, halogen, an alkyl, alkoxy or alkoxyalkyl residue having 1 to 4 C atoms or an optionally substituted aryl residue or aliphatic acyl residue having 2 to 5 atoms,

n =0 or 1,

X =SO.sub.2, OCO, OCS,

B=H, adenine, cytosine, guanine, thymine, uracil, 2,6-diaminopurine-9-yl, hypoxanthine-9-yl, 5-methylcytosine-1-yl, 5-amino-4-imidazole carboxylic acid-1-yl or 5-amino-4-imidazole carboxylic acid amide-3-yl, wherein in case B=adenine, cytosine or guanine the primary amino function optionally has a temporary or permanent protective group and/or thymine or uracil optionally has a permanent protective group at the O4 position.

The invention also relates to a method of producing these **nucleosides**, their use and nucleic acid chips built up

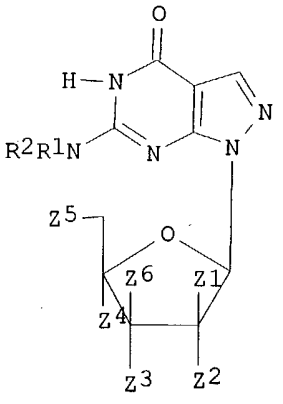
therefrom.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 11 OF 52 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:221699 CAPLUS
DN 138:221790
TI Process for the **synthesis** of pyrazolopyrimidine **nucleosides** via halogenation reaction and using **photolabile** hydroxy **protecting groups**
IN Dempcy, Robert O.; Adams, A. David; Reed, Michael W.
PA Epoch Biosciences, Inc., USA
SO PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003022859	A2	20030320	WO 2002-US28476	20020905
	WO 2003022859	A3	20031204		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2003078413	A1	20030424	US 2001-954624	20010912
	EP 1427743	A2	20040616	EP 2002-766251	20020905
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	US 2004191824	A1	20040930	US 2004-816747	20040401
PRAI	US 2001-954624	A	20010912		
	WO 2002-US28476	W	20020905		

OS CASREACT 138:221790; MARPAT 138:221790
GI



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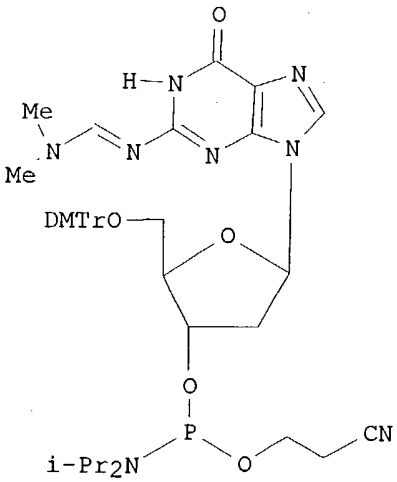


II

AB The present invention provides a **nucleosides** comprising a pyrazolopyrimidine base I and a process for producing the same. In particular, the processes of the present invention comprises using a halogenated pyrazolopyrimidine base and removing the halogen after the base is coupled to a sugar moiety. The presence of the halogen on the **nucleoside** base allows facile and economical production of a large quantity of **nucleosides**. Thus, II was prepared via halogenation reaction and using **photolabile** hydroxy **protecting groups**.

L9 ANSWER 12 OF 52 USPATFULL on STN
AN 2003:257837 USPATFULL
TI CD2000 and CD2001 molecules, and uses thereof
IN Fraser, Christopher C., Lexington, MA, UNITED STATES
PA Millennium Pharmaceuticals, Inc. (U.S. corporation)
PI US 2003180888 A1 20030925
AI US 2003-436523 A1 20030512 (10)
RLI Continuation of Ser. No. US 2001-7303, filed on 2 Nov 2001, PENDING Continuation-in-part of Ser. No. US 2000-706167, filed on 3 Nov 2000, ABANDONED
DT Utility
FS APPLICATION
LREP MILLENNIUM PHARMACEUTICALS, INC., 75 Sidney Street, Cambridge, MA, 02139
CLMN Number of Claims: 23
ECL Exemplary Claim: 1
DRWN 23 Drawing Page(s)
LN.CNT 8282
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides isolated nucleic acid molecules, designated CD2000, which encode polypeptide molecules containing Ig and Ig-like domains and SLAM associated protein (SAP) motifs. The invention also provides isolated nucleic acid molecules, designated CD2001, which encode polypeptide molecules containing an Ig and Ig-like domains. The invention also provides antisense nucleic acid molecules, expression vectors containing the nucleic acid molecules of the invention, host cells into which the expression vectors have been introduced, and non-human transgenic animals in which a nucleic acid molecule of the invention has been introduced or disrupted. The invention still further provides isolated polypeptides, fusion polypeptides, antigenic peptides and antibodies. Diagnostic, screening and therapeutic methods utilizing compositions of the invention are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 13 OF 52 USPATFULL on STN
AN 2003:251104 USPATFULL
TI FAIL molecules and uses thereof
IN Fraser, Christopher C., Lexington, MA, UNITED STATES
PA Millennium Pharmaceuticals, Inc. (U.S. corporation)
PI US 2003175890 A1 20030918
AI US 2003-384850 A1 20030310 (10)
RLI Continuation of Ser. No. US 2000-702021, filed on 30 Oct 2000, PENDING
DT Utility
FS APPLICATION
LREP MILLENNIUM PHARMACEUTICALS, INC., 75 Sidney Street, Cambridge, MA, 02139
CLMN Number of Claims: 20
ECL Exemplary Claim: 1
DRWN 13 Drawing Page(s)
LN.CNT 6045
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention provides isolated nucleic acid molecules, designated FAIL, which encode polypeptide molecules containing Ig and Ig-like domains and

which are homologous to Fc(RI. The invention also provides antisense nucleic acid molecules, expression vectors containing the nucleic acid molecules of the invention, host cells into which the expression vectors have been introduced, and non-human transgenic animals in which a nucleic acid molecule of the invention has been introduced or disrupted. The invention still further provides isolated polypeptides, fusion polypeptides, antigenic peptides and antibodies. Diagnostic, screening and therapeutic methods utilizing compositions of the invention are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 14 OF 52 USPATFULL on STN
AN 2003:200867 USPATFULL
TI High density molecular arrays on porous surfaces
IN Ellson, Richard N., Palo Alto, CA, UNITED STATES
Mutz, Mitchell W., Palo Alto, CA, UNITED STATES
Foote, James K., Cupertino, CA, UNITED STATES
PI US 2003138852 A1 20030724
AI US 2003-338158 A1 20030107 (10)
RLI Continuation of Ser. No. US 2001-964215, filed on 25 Sep 2001, PENDING Continuation-in-part of Ser. No. US 2000-727392, filed on 29 Nov 2000, ABANDONED Continuation-in-part of Ser. No. US 2000-669996, filed on 25 Sep 2000, ABANDONED
DT Utility
FS APPLICATION
LREP REED & EBERLE LLP, 800 MENLO AVENUE, SUITE 210, MENLO PARK, CA, 94025
CLMN Number of Claims: 39
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 2400
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a unique and highly accurate method for generating molecular arrays of very high density on porous surfaces. The method involves the application of focused acoustic energy to each of a plurality of fluid-containing reservoirs to eject a small fluid droplet--on the order of 1 picoliter or less--from each reservoir to a site on a porous substrate surface. High density molecular arrays are provided as well, in which greater than about 62,500 molecular moieties, serving as array elements, are present on a porous surface. Biomolecular arrays that can be generated using focused acoustic ejection include oligonucleotide arrays and peptidic arrays.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 15 OF 52 USPATFULL on STN
AN 2003:113672 USPATFULL
TI Process for the **synthesis** of pyrazolopyrimidines
IN Dempcy, Robert O., Kirkland, WA, UNITED STATES
Adams, A. David, Snohomish, WA, UNITED STATES
Reed, Michael W., Seattle, WA, UNITED STATES
PA Epoch Biosciences, Inc., Bothell, WA (U.S. corporation)
PI US 2003078413 A1 20030424
AI US 2001-954624 A1 20010912 (9)
DT Utility
FS APPLICATION
LREP TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
CLMN Number of Claims: 43
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1015

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a **nucleoside** comprising a pyrazolopyrimidine base and a process for producing the same. In particular, the processes of the present invention comprises using a halogenated pyrazolopyrimidine base and removing the halogen after the base is coupled to a sugar moiety. The presence of the halogen on the **nucleoside** base allows facile and economical production of a large quantity of **nucleosides**.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 16 OF 52 USPATFULL on STN
AN 2003:77027 USPATFULL
TI Acoustic ejection of fluids from a plurality of reservoirs
IN Ellson, Richard N., Palo Alto, CA, UNITED STATES
Foote, James K., Cupertino, CA, UNITED STATES
Mutz, Mitchell W., Palo Alto, CA, UNITED STATES
PI US 2003052943 A1 20030320
US 6802593 B2 20041012
AI US 2002-269413 A1 20021011 (10)
RLI Continuation of Ser. No. US 2001-964212, filed on 25 Sep 2001, PENDING Continuation-in-part of Ser. No. US 2000-727392, filed on 29 Nov 2000, ABANDONED Continuation-in-part of Ser. No. US 2000-669996, filed on 25 Sep 2000, ABANDONED
DT Utility
FS APPLICATION
LREP REED & EBERLE LLP, 800 MENLO AVENUE, SUITE 210, MENLO PARK, CA, 94025
CLMN Number of Claims: 63
ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 2569
AB The present invention provides a method and device for the acoustic ejection of fluid droplets from each of a plurality of fluid-containing reservoirs. The droplets are ejected toward sites on a substrate surface for deposition thereon. The device is comprised of: a plurality of reservoirs each adapted to contain a fluid; an ejector comprising a means for generating acoustic radiation and a means for focusing the generated acoustic radiation so as to eject fluid droplets from the reservoir fluids; and a means for positioning the ejector in acoustically coupled relationship to each of the reservoirs. The invention is useful in a number of contexts, particularly in the preparation of biomolecular arrays.

L9 ANSWER 17 OF 52 USPATFULL on STN
AN 2003:70059 USPATFULL
TI High-throughput biomolecular crystallization and biomolecular crystal screening
IN Mutz, Mitchell W., Palo Alto, CA, UNITED STATES
Ellson, Richard N., Palo Alto, CA, UNITED STATES
Stearns, Richard G., Felton, CA, UNITED STATES
PI US 2003048341 A1 20030313
AI US 2001-765947 A1 20010119 (9)
RLI Continuation-in-part of Ser. No. US 2000-727392, filed on 29 Nov 2000, ABANDONED Continuation-in-part of Ser. No. US 2000-669996, filed on 25 Sep 2000, ABANDONED
DT Utility
FS APPLICATION
LREP REED & ASSOCIATES, 800 MENLO AVENUE, SUITE 210, MENLO PARK, CA, 94025
CLMN Number of Claims: 149
ECL Exemplary Claim: 1
DRWN 7 Drawing Page(s)

LN.CNT 4376
AB The present invention provides a method for the acoustic ejection of fluid droplets from fluid-containing reservoirs to form small volumes high throughput combinatorial experimentation for crystallization. The method is especially suited to preparing combinatorial libraries of small volume crystallization experiments for crystallizing difficult to crystallize biomacromolecules. The small volumes conserve costly and difficult to obtain macromolecules and permit an increased number of experimental crystallization conditions tested for an amount of the biomacromolecule of interest for crystallization. The time required for the experiments is greatly reduced by the scaled down experimental volumes. The invention is conducive to forming high density microarrays of small volume crystallization experiments. Acoustic detection of crystals in situ and distinction between biomacromolecular and non-biomacromolecular crystals is also taught.

L9 ANSWER 18 OF 52 USPATFULL on STN
AN 2003:64683 USPATFULL
TI Abundant, well distributed and hyperpolymorphic simple sequence repeats in prokaryote genomes and use of same for prokaryote classification and typing
IN Kashi, Yechezkel, Haifa, ISRAEL
Gur-Arie, Riva, Binyamina, ISRAEL
Cohen, Cyril, Nesher, ISRAEL
Eitan, Yuval, Jerusalem, ISRAEL
Shelef, Leora, Bloommfield Village, MI, UNITED STATES
Hallerman, Eric, Blacksburg, VA, UNITED STATES
PI US 2003044804 A1 20030306
AI US 2001-971894 A1 20011009 (9)
RLI Division of Ser. No. US 1999-472035, filed on 27 Dec 1999, PATENTED
DT Utility
FS APPLICATION
LREP SOL SHEINBEIN, c/o ANTHONY CASTORINA, SUITE 207, 2001 JEFFERSON DAVIS HIGHWAY, ARLINGTON, VA, 22202
CLMN Number of Claims: 51
ECL Exemplary Claim: 1
DRWN 8 Drawing Page(s)
LN.CNT 1851
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A method is provided for classifying or typing a prokaryote to a class or a type. The method is effected by characterizing at least one polymorphic simple sequence repeat locus in a genome of the prokaryote and, based on a characterization of the polymorphic simple sequence repeat, classifying or typing the prokaryote to a class or a type. Compounds and articles of manufacture are provided for effecting the method.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 19 OF 52 USPATFULL on STN
AN 2002:335702 USPATFULL
TI High-throughput biomolecular crystallization and biomolecular crystal screening
IN Mutz, Mitchell W., Palo Alto, CA, UNITED STATES
Ellson, Richard N., Palo Alto, CA, UNITED STATES
Stearns, Richard G., Felton, CA, UNITED STATES
PI US 2002191048 A1 20021219
US 6808934 B2 20041026
AI US 2002-55245 A1 20020122 (10)
RLI Continuation-in-part of Ser. No. US 2001-765947, filed on 19 Jan 2001, PENDING Continuation-in-part of Ser. No. US 2000-727392, filed on 29 Nov

2000, PENDING Continuation-in-part of Ser. No. US 2000-669996, filed on 25 Sep 2000, PENDING
DT Utility
FS APPLICATION
LREP REED & ASSOCIATES, 800 MENLO AVENUE, SUITE 210, MENLO PARK, CA, 94025
CLMN Number of Claims: 150
ECL Exemplary Claim: 1
DRWN 7 Drawing Page(s)
LN.CNT 3490
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a method for the acoustic ejection of fluid droplets from fluid-containing reservoirs to form arrays suitable for high-throughput combinatorial crystallization experiments. Such arrays may utilize very small fluid volumes, in the order of picoliters. The method is especially suited to preparing combinatorial libraries useful in developing techniques for crystallizing biomacromolecules, such as proteins. The small volumes conserve macromolecules that may be costly and rare, and permit the testing of a large number of experimental crystallization conditions for a given amount of a macromolecule. The time required for the experiments may be very short due to the small volumes. The invention is conducive to forming high-density microarrays of small volume crystallization experiments. Acoustic detection of crystals in situ, and distinction between biomacromolecular and non-biomacromolecular crystals, are also taught.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 20 OF 52 USPATFULL on STN
AN 2002:315206 USPATFULL
TI Nucleic acid probes and methods
IN Grinstaff, Mark W., Durham, NC, UNITED STATES
Beilstein, Amy E., Durham, NC, UNITED STATES
Khan, Shoeb I., Durham, NC, UNITED STATES
PA Duke University (U.S. corporation)
PI US 2002177695 A1 20021128
AI US 2001-941986 A1 20010830 (9)
RLI Continuation of Ser. No. US 1999-377612, filed on 19 Aug 1999, PATENTED
PRAI US 1998-97327P 19980820 (60)
DT Utility
FS APPLICATION
LREP NIXON & VANDERHYE P.C., 8th Floor, 1100 North Glebe Road, Arlington, VA, 22201-4714
CLMN Number of Claims: 40
ECL Exemplary Claim: 1
DRWN 22 Drawing Page(s)
LN.CNT 2022
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides metal-containing purines, pyrimidines, **nucleosides**, nucleotides and oligonucleotides; including phosphoramidite and photolabile derivatives thereof, including methods of making and method of using same. The present invention provides a method for detection of nucleic acid sequences via electrochemical or photochemical means.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 21 OF 52 USPATFULL on STN
AN 2002:265861 USPATFULL
TI **Nucleoside** derivatives with **photolabile protective groups**
IN Pfleiderer, Wolfgang, Konstanz, GERMANY, FEDERAL REPUBLIC OF
Buhler, Sigrid, Konstanz, GERMANY, FEDERAL REPUBLIC OF

Giegrich, Heiner, Waldkraiburg, GERMANY, FEDERAL REPUBLIC OF
PI US 2002146737 A1 20021010
US 6750335 B2 20040615
AI US 2002-108565 A1 20020329 (10)
RLI Continuation of Ser. No. WO 2000-EP9958, filed on 10 Oct 2000, UNKNOWN
PRAI DE 1999-19952113 19991029
DT Utility
FS APPLICATION
LREP Gary M. Nath, NATH & ASSOCIATES PLLC, 1030 15th Street, N.W. - 6th Floor, Washington, DC, 20005
CLMN Number of Claims: 14
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1056
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to **nucleoside** derivatives with **photolabile protecting groups** of general formula (I), where R.sup.1=H, F, Cl, Br, I, NO.sub.2; R.sup.2=H, CN, where R.sup.1 and R.sup.2 are not simultaneously H; R.sup.3=H, 1-4 C alkyl, phenyl; R.sup.4=H or a conventional functional group for the **synthesis** of oligonucleotides; R.sup.5=H, OH, halogen or XR.sup.6, where X=O or S and R.sup.6=a conventional nucleotide protecting group; B=adenine, cytosine, guanine, thymine, uracil, 2,6-diaminopurin-9-yl, hypoxanthin-9-yl, 5-methylcytosin-1-yl, 5-amino-4-imidazolcarboxamid-1-yl or 5-amino-4-imidazolcarboxamid-3-yl, where, if B=adenine, cytosine or guanine the primary amine functionality, optionally, carries a permanent protecting group. .. Furthermore, these derivatives may be used for the light-controlled **synthesis** of oligonucleotides on a DNA chip.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 22 OF 52 USPATFULL on STN
AN 2002:191521 USPATFULL
TI Massive parallel method for decoding DNA and RNA
IN Ju, Jingyue, Englewood Cliffs, NJ, UNITED STATES
Li, Zengmin, New York, NY, UNITED STATES
Edwards, John Robert, New York, NY, UNITED STATES
Itagaki, Yasuhiro, New York, NY, UNITED STATES
PI US 2002102586 A1 20020801
US 6664079 B2 20031216
AI US 2001-972364 A1 20011005 (9)
RLI Continuation-in-part of Ser. No. US 2000-684670, filed on 6 Oct 2000, PENDING
PRAI US 2001-300894P 20010626 (60)
DT Utility
FS APPLICATION
LREP John P. White, Cooper & Dunham LLP, 1185 Avenue of the Americas, New York, NY, 10036
CLMN Number of Claims: 60
ECL Exemplary Claim: 1
DRWN 28 Drawing Page(s)
LN.CNT 1869
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention provides methods for attaching a nucleic acid to a solid surface and for sequencing nucleic acid by detecting the identity of each nucleotide analogue after the nucleotide analogue is incorporated into a growing strand of DNA in a polymerase reaction. The invention also provides nucleotide analogues which comprise unique labels attached to the nucleotide analogue through a cleavable linker, and a cleavable chemical group to cap the --OH group at the 3'-position of the deoxyribose.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 23 OF 52 USPATFULL on STN
AN 2002:163464 USPATFULL
TI Focused acoustic energy in the preparation and screening of combinatorial libraries
IN Mutz, Mitchell W., Palo Alto, CA, UNITED STATES
Ellson, Richard N., Palo Alto, CA, UNITED STATES
PI US 2002085063 A1 20020704
AI US 2001-962732 A1 20010924 (9)
RLI Continuation-in-part of Ser. No. US 2000-727392, filed on 29 Nov 2000, PENDING Continuation-in-part of Ser. No. US 2000-669996, filed on 25 Sep 2000, PENDING
DT Utility
FS APPLICATION
LREP REED & ASSOCIATES, 800 MENLO AVENUE, SUITE 210, MENLO PARK, CA, 94025
CLMN Number of Claims: 40
ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 2790
AB The present invention provides a method for the acoustic ejection of fluid droplets from each of a plurality of fluid-containing reservoirs to prepare combinatorial libraries in the form of microarrays. An acoustic ejection device is used comprised of a plurality of fluid reservoirs, an ejector for generating acoustic radiation and focusing the acoustic radiation generated at a focal point sufficiently near the fluid surface in each of the reservoirs such that a fluid droplet is ejected therefrom toward a site on a substrate surface, and a means for positioning the ejector in acoustically coupled relationship to each of the reservoirs. The combinatorial libraries may comprise biological or nonbiological moieties.

L9 ANSWER 24 OF 52 USPATFULL on STN
AN 2002:119615 USPATFULL
TI Focused acoustic energy in the preparation and screening of combinatorial libraries
IN Mutz, Mitchell W., Palo Alto, CA, UNITED STATES
Ellson, Richard N., Palo Alto, CA, UNITED STATES
PI US 2002061598 A1 20020523
US 6612686 B2 20030902
AI US 2001-964193 A1 20010925 (9)
RLI Continuation-in-part of Ser. No. US 2000-727392, filed on 29 Nov 2000, PENDING Continuation-in-part of Ser. No. US 2000-669996, filed on 25 Sep 2000, PENDING
DT Utility
FS APPLICATION
LREP REED & ASSOCIATES, 800 MENLO AVENUE, SUITE 210, MENLO PARK, CA, 94025
CLMN Number of Claims: 41
ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 2804
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a method for the acoustic ejection of fluid droplets from each of a plurality of fluid-containing reservoirs to prepare combinatorial libraries in the form of microarrays. An acoustic ejection device is used comprised of a plurality of fluid reservoirs, an ejector for generating acoustic radiation and focusing the acoustic radiation generated at a focal point sufficiently near the fluid surface in each of the reservoirs such that a fluid droplet is ejected therefrom toward a site on a substrate surface, and a means for

positioning the ejector in acoustically coupled relationship to each of the reservoirs. The combinatorial libraries may comprise biological or nonbiological moieties.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 25 OF 52 USPATFULL on STN
AN 2002:119278 USPATFULL
TI Focused acoustic energy in the preparation and screening of combinatorial libraries
IN Mutz, Mitchell W., Palo Alto, CA, UNITED STATES
Ellson, Richard N., Palo Alto, CA, UNITED STATES
PI US 2002061258 A1 20020523
AI US 2000-727392 A1 20001129 (9)
RLI Continuation-in-part of Ser. No. US 2000-669996, filed on 25 Sep 2000, PENDING
DT Utility
FS APPLICATION
LREP Ofer I. Matalon, REED & ASSOCIATES, 3282 Alpine Road, Portola Valley, CA, 94028
CLMN Number of Claims: 36
ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 2773
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a method for the acoustic ejection of fluid droplets from each of a plurality of fluid-containing reservoirs to prepare combinatorial libraries in the form of microarrays. An acoustic ejection device is used comprised of a plurality of fluid reservoirs, an ejector for generating acoustic radiation and the acoustic radiation at a focal point near the fluid surface in each of the reservoirs, and a means for positioning the ejector in acoustically coupled relationship to each of the reservoirs. The combinatorial libraries may comprise biological or nonbiological moieties.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 26 OF 52 USPATFULL on STN
AN 2002:104322 USPATFULL
TI Method for photolytically deprotecting immobilized **nucleoside** derivatives, especially in the production of DNA chips
IN Stengele, Klaus-Peter, Pleiskirchen, GERMANY, FEDERAL REPUBLIC OF
Giegrich, Heinrich, Waldkraiburg, GERMANY, FEDERAL REPUBLIC OF
PA NIGU CHEMIE GMBH (non-U.S. corporation)
PI US 2002053508 A1 20020509
US 6552182 B2 20030422
AI US 2001-948537 A1 20010910 (9)
RLI Continuation of Ser. No. WO 2000-EP2197, filed on 13 Mar 2000, UNKNOWN
PRAI DE 1999-19910808 19990311
DE 1999-19953289 19991105
DT Utility
FS APPLICATION
LREP SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC, 2100 Pennsylvania Avenue, NW, Washington, DC, 20037-3213
CLMN Number of Claims: 18
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 468
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to a method for the specific photolytic deprotection of **nucleoside** derivatives that are immobilized on a substrate, especially for use in the production of DNA chips. Said

method is characterized in that a gel or viscous liquid layer is applied on the **nucleoside** derivatives that are immobilized on a substrate. Said gel or viscous liquid contains one or more polymer compounds and at least one representative from the group comprising water, water/C.sub.1-C.sub.4 alcohol mixtures and polar aprotic solvents. For initiating the deprotection, the **nucleoside** derivates are irradiated. This method favors a rapid, clean and complete removal of the **photolabile protective groups** from the **nucleoside** derivatives, which results in the required purity of the synthesized nucleotide or oligonucleotide sequences.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 27 OF 52 USPATFULL on STN
AN 2002:66926 USPATFULL
TI Acoustic ejection of fluids from a plurality of reservoirs
IN Ellson, Richard N., Palo Alto, CA, UNITED STATES
Foote, James K., Cupertino, CA, UNITED STATES
Mutz, Mitchell W., Palo Alto, CA, UNITED STATES
PI US 2002037579 A1 20020328
US 6666541 B2 20031223
AI US 2001-964212 A1 20010925 (9)
RLI Continuation-in-part of Ser. No. US 2000-727392, filed on 29 Nov 2000, PENDING Continuation-in-part of Ser. No. US 2000-669996, filed on 25 Sep 2000, PENDING
DT Utility
FS APPLICATION
LREP REED & ASSOCIATES, 800 MENLO AVENUE, SUITE 210, MENLO PARK, CA, 94025
CLMN Number of Claims: 76
ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 2602
AB The present invention provides a method and device for the acoustic ejection of fluid droplets from each of a plurality of fluid-containing reservoirs. The droplets are ejected toward sites on a substrate surface for deposition thereon. The device is comprised of: a plurality of reservoirs each adapted to contain a fluid; an ejector comprising a means for generating acoustic radiation and a means for focusing the generated acoustic radiation so as to eject fluid droplets from the reservoir fluids; and a means for positioning the ejector in acoustically coupled relationship to each of the reservoirs. The invention is useful in a number of contexts, particularly in the preparation of biomolecular arrays.

L9 ANSWER 28 OF 52 USPATFULL on STN
AN 2002:66874 USPATFULL
TI High density molecular arrays on porous surfaces
IN Ellson, Richard N., Palo Alto, CA, UNITED STATES
Mutz, Mitchell W., Palo Alto, CA, UNITED STATES
Foote, James K., Cupertino, CA, UNITED STATES
PI US 2002037527 A1 20020328
US 6746104 B2 20040608
AI US 2001-964215 A1 20010925 (9)
RLI Continuation-in-part of Ser. No. US 2000-727392, filed on 29 Nov 2000, PENDING Continuation-in-part of Ser. No. US 2000-669996, filed on 25 Sep 2000, PENDING
DT Utility
FS APPLICATION
LREP REED & ASSOCIATES, 800 MENLO AVENUE, SUITE 210, MENLO PARK, CA, 94025
CLMN Number of Claims: 21
ECL Exemplary Claim: 1

DRWN 3 Drawing Page(s)
LN.CNT 2343
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a unique and highly accurate method for generating molecular arrays of very high density on porous surfaces. The method involves the application of focused acoustic energy to each of a plurality of fluid-containing reservoirs to eject a small fluid droplet--on the order of 1 picoliter or less--from each reservoir to a site on a porous substrate surface. High density molecular arrays are provided as well, in which greater than about 62,500 molecular moieties, serving as array elements, are present on a porous surface. Biomolecular arrays that can be generated using focused acoustic ejection include oligonucleotide arrays and peptidic arrays.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 29 OF 52 USPATFULL on STN
AN 2002:168043 USPATFULL
TI Method of synthesizing diverse collections of oligomers
IN Dower, William, Menlo Park, CA, United States
Barrett, Ronald W., Sunnyvale, CA, United States
Gallop, Mark A., East Palo Alto, CA, United States
Needels, Michael C., Oakland, CA, United States
PA Affymax, Inc., Palo Alto, CA, United States (U.S. corporation)
PI US 6416949 B1 20020709
AI US 1999-256838 19990224 (9)
RLI Continuation of Ser. No. US 1998-151467, filed on 11 Sep 1998, now patented, Pat. No. US 6140493 Continuation of Ser. No. US 1995-473676, filed on 6 Jun 1995, now abandoned Division of Ser. No. US 1992-946239, filed on 16 Sep 1992, now patented, Pat. No. US 5770358 Continuation-in-part of Ser. No. US 1991-762522, filed on 18 Sep 1991, now abandoned
DT Utility
FS GRANTED
EXNAM Primary Examiner: Ponnaluri, Padmashri; Assistant Examiner: Garcia, Maurie E.
LREP Townsend and Townsend and Crew LLP
CLMN Number of Claims: 4
ECL Exemplary Claim: 1
DRWN 18 Drawing Figure(s); 13 Drawing Page(s)
LN.CNT 2190
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A general stochastic method for synthesizing random oligomers can be used to synthesize compounds to screen for desired properties. The use of identification tags on the oligomers facilitates identification of oligomers with desired properties.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 30 OF 52 USPATFULL on STN
AN 2002:136757 USPATFULL
TI Methods for detection of nucleic acid polymorphisms using peptide-labeled oligonucleotides and antibody arrays
IN Iris, Francois J.-M., Chaville, FRANCE
Pourny, Jean-Louis, Neuilly, FRANCE
PA ValiGen (US), Inc., Newtown, PA, United States (U.S. corporation)
PI US 6403309 B1 20020611
AI US 1999-272970 19990319 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Zitomer, Stephanie W.
LREP Pennie & Edmonds LLP

CLMN Number of Claims: 37
ECL Exemplary Claim: 1
DRWN 3 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 2187
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention is directed to methods and compositions for use in screening nucleic acid populations for nucleic acid polymorphisms. The methods, referred to generally as ValiGene.sup.SM Mutation Screening, Peptide-Linked (VGMS-PL) methods, are specifically designed for high-throughput genotype mapping and gene expression analysis of animal and plant nucleic acids without requiring a PCR amplification step. In particular, the methods of the invention utilize oligonucleotide probes labeled with distinguishable and identifiable peptide tags, that are captured on addressable antibody arrays.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 31 OF 52 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:560143 CAPLUS
DN 137:338085
TI Photolabile groups for exocyclic amino and O6/N-1 lactam protection in oligonucleotide **synthesis**
AU Misra, Arvind; Tripathi, Snehlata; Misra, Krishna
CS Nucleic Acids Research Laboratory, Department of Chemistry, University of Allahabad, Allahabad, 211 002, India
SO Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (2002), 41B(7), 1454-1459
CODEN: IJSBDB; ISSN: 0376-4699
PB National Institute of Science Communication
DT Journal
LA English
AB The use of o-nitrobenzyloxycarbonyl (nCbz) for direct protection of exocyclic amino function of **nucleosides** viz. adenosine, cytidine and deoxyguanosine using o-nitrobenzyl-p-nitrophenyl carbonate as a reagent and O6-derivatization of deoxyguanosine with o-nitrobenzyl (nBzl) using o-nitrobenzyldiazomethane as a reagent is being reported. Both these protected groups could be cleaved by irradiation at 354nm to yield valuable building blocks for oligonucleotide **synthesis**.
RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

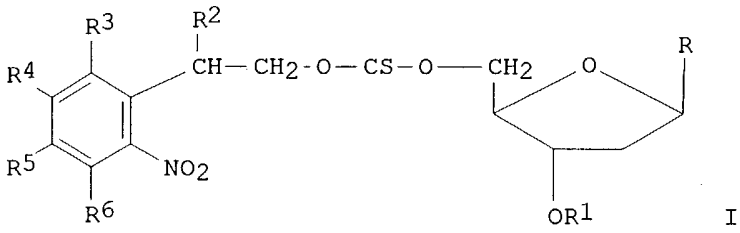
L9 ANSWER 32 OF 52 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:137226 CAPLUS
DN 134:178767
TI Preparation of **nucleoside** derivatives capable of undergoing UV-photolysis for oligonucleotide **synthesis**
IN Berlin, Kurt
PA Epigenomics A.-G., Germany
SO PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001012642	A2	20010222	WO 2000-DE2755	20000810
	WO 2001012642	A3	20010607		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,

YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

DE 19938092 A1 20010222 DE 1999-19938092 19990812
EP 1325016 A2 20030709 EP 2000-962214 20000810
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL
PRAI DE 1999-19938092 A 19990812
WO 2000-DE2755 W 20000810
OS MARPAT 134:178767
GI



I

AB Disclosed are novel **nucleoside** derivs. of general formula [(I); R = nucleobase or nucleobase with at least one protective group; R1 = H, P(N(C(CH3)2)2)O(CH2)2CN; R2 = H, alkyl; R3 = H, NO2, alkyl; R4, R5 = independently, H, alkyl, alkoxy; or together = -OCH2O-; R6 = H, alkyl], which can easily be split by means of UV light and can be used for **synthesis** of oligonucleotides. Thus, 2,6-dinitrotoluene was treated with DMSO and KOC(CH3)3 in HOC(CH3)3 to give 2,6(NO2)2C6H3CH2CH2OH, which was condensed with Cl2C(S) to give the thiocarbonyl chloride, which was reacted with thymidine to give I (R = thymine; R1, R2, R4, R5, R6 = H; R3 = NO2) in 30% yield. An example of photolysis of I (R = thymine; R1 - R6 = H) was given.

L9 ANSWER 33 OF 52 WPIDS COPYRIGHT 2004 THE THOMSON CORP on STN
AN 2001-258864 [27] WPIDS
DNC C2001-078231
TI New **nucleoside** derivatives containing readily cleavable **photolabile** nitrophenylalkoxysulfonyl **protecting group**, useful in automated **synthesis** of oligonucleotides.
DC B02 B03 D16
IN BERLIN, K
PA (EPIG-N) EPIGENOMICS GMBH; (EPIG-N) EPIGENOMICS AG
CYC 95
PI DE 19938092 A1 20010222 (200127)* 7
WO 2001012642 A2 20010222 (200127) GE
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000074028 A 20010313 (200134)
EP 1325016 A2 20030709 (200345) GE
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
ADT DE 19938092 A1 DE 1999-1038092 19990812; WO 2001012642 A2 WO 2000-DE2755 20000810; AU 2000074028 A AU 2000-74028 20000810; EP 1325016 A2 EP

2000-962214 20000810, WO 2000-DE2755 20000810
FDT AU 2000074028 A Based on WO 2001012642; EP 1325016 A2 Based on WO 2001012642
PRAI DE 1999-19938092 19990812
AN 2001-258864 [27] WPIDS
AB DE 19938092 A UPAB: 20010518
NOVELTY - Nitrophenylalkoxysulfonyl-protected **nucleoside** derivatives (I) are new.
DETAILED DESCRIPTION - Nitrophenylalkoxysulfonyl-protected **nucleoside** derivatives of formula (I) are new.
R1 = **nucleoside** base (optionally containing at least one protective group);
R2 = H or diisopropylamino-(2-cyanoethoxy)-phosphinyl;
R3 = H or 1-4C alkyl;
R4 = H, NO2 or 1-4C alkyl;
R5, R6 = H, 1-4C alkyl or 1-4C alkoxy; or
R5 + R6 = OCH2O;
R7 = H or 1-4C alkyl;
n = 0 or 1.
INDEPENDENT CLAIMS are included for:
(1) the preparation of (I); and
(2) a kit for the automated **synthesis** of oligonucleotides, including at least one compound (I), optionally further **nucleoside** compounds and reagents, auxiliaries, solvents and instructions for use.
USE - The use of (I) is claimed in the automated **synthesis** of oligonucleotides.
ADVANTAGE - (I) contain a **photolabile protective group** which can be cleaved easily and efficiently by photolysis (e.g. using a high pressure mercury lamp). Complete deprotection can be carried out sufficiently rapidly to avoid side-reactions in sensitive biomolecules such as DNA.
Dwg.0/1

L9 ANSWER 34 OF 52 USPATFULL on STN
AN 2001:223891 USPATFULL
TI Methods for reducing non-specific binding to an oligonucleotide array
IN McGall, Glenn, Mountain View, CA, United States
Goldberg, Martin, San Jose, CA, United States
Ryder, Thomas B., Los Gatos, CA, United States
Woodman, Steve, San Jose, CA, United States
PI US 2001049108 A1 20011206
AI US 2001-862571 A1 20010523 (9)
RLI Continuation of Ser. No. US 1998-63311, filed on 20 Apr 1998, PENDING
DT Utility
FS APPLICATION
LREP TOWNSEND AND TOWNSEND AND CREW, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834
CLMN Number of Claims: 42
ECL Exemplary Claim: 1
DRWN 2 Drawing Page(s)
LN.CNT 2204
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides a variety of methods for reducing non-specific binding of a target molecule or plurality of target molecules to an array of oligonucleotides. The methods of the present invention include surface modification techniques and oligonucleotide modification techniques. According to one method of the present invention, non-specific binding of a target molecule to an array of oligonucleotides is reduced by replacing at least one of: i) the protecting groups on each of the plurality of oligonucleotides, and ii) the protecting groups on each of the protected regions of the substrate, with a negatively charged phosphate residue.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 35 OF 52 USPATFULL on STN
AN 2001:214842 USPATFULL
TI Abundant, well distributed and hyperpolymorphic simple sequence repeats in prokaryote genomes and use of same for prokaryote classification and typing
IN Kashi, Yechezkel, Haifa, Israel
Gur-Arie, Riva, Binyamina, Israel
Cohen, Cyril, Nebher, Israel
Eitan, Yuval, Jerusalem, Israel
Shelef, Leora, Bloomfield Vill., MI, United States
Hallerman, Eric, Blacksburg, VA, United States
PA Technion Research and Development Foundation Ltd., Haifa, Israel (non-U.S. corporation)
PI US 6322985 B1 20011127
AI US 1999-472035 19991227 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Fredman, Jeffrey
CLMN Number of Claims: 17
ECL Exemplary Claim: 1
DRWN 8 Drawing Figure(s); 8 Drawing Page(s)
LN.CNT 1708
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A method is provided for classifying or typing a prokaryote to a class or a type. The method is effected by characterizing at least one polymorphic simple sequence repeat locus in a genome of the prokaryote and, based on a characterization of the polymorphic simple sequence repeat, classifying or typing the prokaryote to a class or a type. Compounds and articles of manufacture are provided for effecting the method.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 36 OF 52 USPATFULL on STN
AN 2001:153111 USPATFULL
TI Methods of **synthesis** of halogen base-modified oligonucleotides and subsequent labeling with a metal-catalyzed reaction
IN Grinstaff, Mark W., Durham, NC, United States
Beilstein, Amy E., Durham, NC, United States
Khan, Shoeb I., Durham, NC, United States
PA Duke University, Durham, NC, United States (U.S. corporation)
PI US 6288221 B1 20010911
AI US 1999-377612 19990819 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Marschel, Ardin H.
LREP Nixon & Vanderhye P.C.
CLMN Number of Claims: 21
ECL Exemplary Claim: 1
DRWN 22 Drawing Figure(s); 22 Drawing Page(s)
LN.CNT 1849
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides metal-containing purines, pyrimidines, **nucleosides**, nucleotides and oligonucleotides; including phosphoramidite and photolabile derivatives thereof, including methods of making and method of using same. The present invention provides a method for detection of nucleic acid sequences via electrochemical or photochemical means.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 37 OF 52 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:255479 CAPLUS
DN 135:33621
TI Photolabile group for 5'-OH protection of **nucleosides**: **synthesis** and photo-deprotection rate
AU Berroy, P.; Viriot, M. L.; Carre, M. C.
CS Departement de Chimie Physique des Reactions, GRAPP, Groupe ENSIC, rue Grandville, 1, UMR 7630 CNRS-INPL, Nancy, 54000, Fr.
SO Sensors and Actuators, B: Chemical (2001), B74(1-3), 186-189
CODEN: SABCEB; ISSN: 0925-4005
PB Elsevier Science S.A.
DT Journal
LA English
AB In this paper, we described the properties of a new photolabile group, 2-(3,4-methylenedioxy-6-nitrophenyl)propoxycarbonyl, MNPPOC. In spite of moderate yields of **synthesis**, photolytic properties could be analyzed for 5'-OH protected T and dAiBu. The half-lives (t1/2) 11 and 12 s were found, resp., with a good recovery of the corresponding deprotected deoxynucleoside (95-99%). The photolysis rate of this new photolabile group was five-fold faster than the MeNPOC one.
RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 38 OF 52 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN DUPLICATE 1
AN 2001:266607 BIOSIS
DN PREV200100266607
TI **Nucleoside** derivatives with **photolabile protective groups**.
AU Pfleiderer, Wolfgang [Inventor, Reprint author]; Buhler, Sigrid [Inventor]
CS Constance, Germany
ASSIGNEE: Wolfgang Pfleiderer, Constance, Germany
PI US 6153744 November 28, 2000
SO Official Gazette of the United States Patent and Trademark Office Patents, (Nov. 28, 2000) Vol. 1240, No. 4. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DT Patent
LA English
ED Entered STN: 6 Jun 2001
Last Updated on STN: 19 Feb 2002
AB The invention relates to nucleo-side derivatives with photo-unstable protective groups of the general formula (I) ##STR1## in which R1 is H, NO2, CN, OCH3, halogen, alkyl or alkoxyalkyl with 1 to 4 C atoms, R2 is H, OCH3, R3 is H, F, Cl, Br, NO2 or an aliphatic acyl radical with 2 to 5 C atoms, R4 is H, halogen, OCH3, an alkyl radical with 1 to 4 C atoms or a possibly substituted aryl radical, R5 is H or a conventional functional group for producing oligonucleotides, R6 is H, OH, halogen or XR8, where X is O or S and R8 is a conventional protective group in nucleotide chemistry, B is adenine, cytosin, guanine, thymine, uracil, 2,6-diaminopurin-9-yl, hypoxanthin-9-yl, 5-methylcytosin-1-yl, 5-amino-4-imidazol carboxylic acid amid-1-yl or 5-amino-4-imidazol carboxylic acid amide-3-yl, where, if B is adenine, cytosin or guanine, the primary amino function may have a permanent protective group. These derivatives may be used for the light-controlled **synthesis** of oligonucleotides on a DNA chip.

L9 ANSWER 39 OF 52 WPIDS COPYRIGHT 2004 THE THOMSON CORP on STN
AN 2000-679457 [66] WPIDS
DNC C2000-206606
TI New **nucleoside** derivatives with **photolabile**

protecting groups, useful in oligonucleotide **synthesis**, particularly on solid phases, e.g. for hybridization testing.

DC B02 B03 B04 D16

IN BEIER, M; HOHEISEL, J; HONEISEL, J

PA (DEKR-N) DEUT KREBSFORSCHUNGSZENTRUM

CYC 86

PI WO 2000061594 A2 20001019 (200066)* GE 47
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW
DE 19915867 A1 20001019 (200066)
AU 2000050598 A 20001114 (200108)
DE 10003631 A1 20010802 (200145)
EP 1212338 A2 20020612 (200239) GE
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
US 6756492 B1 20040629 (200443)

ADT WO 2000061594 A2 WO 2000-DE1148 20000407; DE 19915867 A1 DE 1999-1015867 19990408; AU 2000050598 A AU 2000-50598 20000407; DE 10003631 A1 DE 2000-10003631 20000128; EP 1212338 A2 EP 2000-934905 20000407, WO 2000-DE1148 20000407; US 6756492 B1 WO 2000-DE1148 20000407, US 2002-958610 20020221

FDT AU 2000050598 A Based on WO 2000061594; EP 1212338 A2 Based on WO 2000061594; US 6756492 B1 Based on WO 2000061594

PRAI DE 2000-10003631 20000128; DE 1999-19915867 19990408

AN 2000-679457 [66] WPIDS

AB WO 200061594 A UPAB: 20001219

NOVELTY - New **nucleoside** derivatives (I) with **photolabile protecting groups**.

DETAILED DESCRIPTION - **Nucleoside** derivatives of formula (I) are new:

R1-R4 and R7 = H, NO2, CN, halo, 1-4C alkyl, alkoxy or alkoxyalkoxy, optionally substituted aryl or 2-5C aliphatic acyl;

R5 = H, dimethoxytrityl or a conventional protecting group or conventional functional group for preparation of a protecting group;

R6 = H, OH or YR8;

Y = O or S;

R8 = 1-4C alkyl or alkoxyalkyl, optionally substituted aryl, 2-5C aliphatic acyl or a conventional protecting group;

n = 0 or 1;

X = sulfonyl, OCO or OCS;

B = H, adenine, guanine, cytosine, thymine, uracil, 2,6-diaminopurin-9-yl, hypoxanthin-9-yl, 5-methylcytosin-1-yl, 5-amino-4-imidazole-carboxylic acid-1- or 3-yl, and if adenine, guanine or cytosine, then the primary amino may be protected, temporarily or permanently, and if thymine or uracil the O4 position may be protected permanently.

INDEPENDENT CLAIMS are included for:

(1) method for preparing (I); and

(2) nucleic acid chips in which oligonucleotides, produced by light-controlled **synthesis**, are attached via their 3'-ends to a solid phase.

USE - (I) are used to synthesize oligonucleotides using the photolithographic nucleic acid chip method, particularly where these are intended for performing enzymatic reactions initiated from a free 3'-hydroxy (especially solid-phase polymerase reactions or ligase reactions, but also reverse transcription, cDNA **synthesis** etc.), also for hybridization testing, sequencing and in DNA computing.

ADVANTAGE - (I) are produced with high selectivity by reaction with a mild acylating agent that has high specificity for the 3'-position, without significant side-reactions (cf. more reactive acylating agents such as chloroformates).
Dwg.0/13

L9 ANSWER 40 OF 52 USPATFULL on STN
AN 2000:146539 USPATFULL
TI Method of synthesizing diverse collections of oligomers
IN Dower, William J., Menlo Park, CA, United States
Barrett, Ronald W., Sunnyvale, CA, United States
Gallop, Mark A., East Palo Alto, CA, United States
Needels, Michael C., Oakland, CA, United States
PA Affymax Technologies N.V., Greenford, United Kingdom (non-U.S. corporation)
PI US 6140493 20001031
AI US 1998-151467 19980911 (9)
RLI Continuation of Ser. No. US 1995-473676, filed on 6 Jun 1995, now abandoned which is a division of Ser. No. US 1992-946239, filed on 16 Sep 1992, now patented, Pat. No. US 5770358 which is a continuation-in-part of Ser. No. US 1991-762522, filed on 18 Sep 1991, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Wilson, James O.
LREP Stevens, Lauren L.
CLMN Number of Claims: 8
ECL Exemplary Claim: 1
DRWN 18 Drawing Figure(s); 13 Drawing Page(s)
LN.CNT 2262
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A general stochastic method for synthesizing random oligomers can be used to synthesize compounds to screen for desired properties. The use of identification tags on the oligomers facilitates identification of oligomers with desired properties.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 41 OF 52 USPATFULL on STN
AN 1999:40579 USPATFULL
TI **Photolabile nucleoside protecting groups**
IN Fodor, Stephen P. A., Palo Alto, CA, United States
Holmes, Christopher P., Sunnyvale, CA, United States
Solas, Dennis W., San Francisco, CA, United States
PA Affymetrix, Inc., Santa Clara, CA, United States (U.S. corporation)
PI US 5889165 19990330
AI US 1995-444598 19950519 (8)
RLI Division of Ser. No. US 1995-390272, filed on 16 Feb 1995, now patented, Pat. No. US 5489678 which is a continuation of Ser. No. US 1990-624120, filed on 6 Dec 1990, now abandoned which is a continuation-in-part of Ser. No. US 1990-492462, filed on 7 Mar 1990, now patented, Pat. No. US 5143854 And a continuation-in-part of Ser. No. US 1989-362901, filed on 7 Jun 1989, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Zitomer, Stephanie W.; Assistant Examiner: Riley, Jezia
LREP Townsend & Townsend & Crew LLP
CLMN Number of Claims: 25
ECL Exemplary Claim: 1
DRWN 22 Drawing Figure(s); 17 Drawing Page(s)

LN.CNT 1812
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A synthetic strategy for the creation of large scale chemical diversity. Solid-phase chemistry, **photolabile protecting groups**, and photolithography are used to achieve light-directed spatially-addressable parallel chemical **synthesis**. Binary masking techniques are utilized in one embodiment. A reactor system, photoremovable protective groups, and improved data collection and handling techniques are also disclosed. A technique for screening linker molecules is also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 42 OF 52 USPATFULL on STN
AN 1998:72393 USPATFULL
TI Tagged synthetic oligomer libraries
IN Dower, William J., Menlo Park, CA, United States
Barrett, Ronald W., Sunnyvale, CA, United States
Gallop, Mark A., East Palo Alto, CA, United States
Needels, Michael C., Oakland, CA, United States
PA Affymax Technologies N.V., Greenford, United Kingdom (non-U.S. corporation)
PI US 5770358 19980623
AI US 1992-946239 19920916 (7)
RLI Continuation-in-part of Ser. No. US 1991-762522, filed on 18 Sep 1991, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Jones, W. Gary; Assistant Examiner: Atzel, Amy
LREP Stevens, Lauren L., Kaster, Kevin R.
CLMN Number of Claims: 18
ECL Exemplary Claim: 1
DRWN 18 Drawing Figure(s); 13 Drawing Page(s)
LN.CNT 2262
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A general stochastic method for synthesizing random oligomers can be used to synthesize compounds to screen for desired properties. The use of identification tags on the oligomers facilitates identification of oligomers with desired properties.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 43 OF 52 USPATFULL on STN
AN 1998:65376 USPATFULL
TI **Nucleoside** derivatives with **photolabile protective groups**
IN Pfleiderer, Wolfgang, Lindauer Strasse 47, Konstanz D-78464, Germany, Federal Republic of
Giegrich, Heiner, Konstanz, Germany, Federal Republic of
PA Pfleiderer, Wolfgang, Konstanz, Germany, Federal Republic of (non-U.S. individual)
PI US 5763599 19980609
WO 9618634 19960620
AI US 1996-693217 19960809 (8)
WO 1995-EP4976 19951215
19960809 PCT 371 date
19960809 PCT 102(e) date
PRAI DE 1994-4444996 19941216
DT Utility
FS Granted
EXNAM Primary Examiner: Kunz, Gary L.
LREP Felfe & Lynch

CLMN Number of Claims: 30
ECL Exemplary Claim: 1,29
DRWN No Drawings
LN.CNT 1750
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The invention relates to **nucleoside** derivatives having **photolabile protective groups** of the general formula (I) ##STR1## in which R.sup.1 .dbd.H, NO.sub.2, CN, OCH.sub.3, halogen or alkyl or alkoxyalkyl having 1 to 4 C atoms

R.sup.2 .dbd.H, OCH.sub.3

R.sup.3 .dbd.H, F, Cl, Br, NO.sub.2

R.sup.4 .dbd.H, halogen, OCH.sub.3, or an alkyl radical having 1 to 4 C atoms

R.sup.5 .dbd.H or a usual functional group for preparing oligonucleotides

R.sup.6 .dbd.H, OH, halogen or XR.sup.8, where X.dbd.O or S and R.sup.8 represents a protective group usual in nucleotide chemistry,

B=adenine, cytosine, guanine, thymine, uracil, 2,6-diaminopurin-9-yl, hypoxanthin-9-yl, 5-methylcytosin-1-yl, 5-amino-4-imidazolcarboxamid-1-yl, or 5-amino-4-imidazolcarboxamid-3-yl, where in the case of B=adenine, cytosine or guanine, the primary amino function optionally exhibits a permanent protective group.

These derivatives may be used for the light-controlled **synthesis** of oligonucleotides on a DNA chip.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 44 OF 52 USPATFULL on STN
AN 1998:55027 USPATFULL
TI **Photolabile nucleoside protecting groups**
IN Fodor, Stephen P. A., Palo Alto, CA, United States
Holmes, Christopher P., Sunnyvale, CA, United States
Solas, Dennis W., San Francisco, CA, United States
PA Affymetrix, Inc., Santa Clara, CA, United States (U.S. corporation)
PI US 5753788 19980519
AI US 1995-446177 19950519 (8)
RLI Division of Ser. No. US 1995-390272, filed on 16 Feb 1995, now patented, Pat. No. US 5489678 which is a continuation of Ser. No. US 1990-624120, filed on 6 Dec 1990, now abandoned which is a continuation-in-part of Ser. No. US 1990-492462, filed on 7 Mar 1990, now patented, Pat. No. US 5143854 which is a continuation-in-part of Ser. No. US 1989-362901, filed on 7 Jun 1989, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Elliott, George C.; Assistant Examiner: Riley, Jezia
LREP Townsend & Townsend & Crew LLP
CLMN Number of Claims: 46
ECL Exemplary Claim: 1
DRWN 22 Drawing Figure(s); 17 Drawing Page(s)
LN.CNT 1819
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A synthetic strategy for the creation of large scale chemical diversity. Solid-phase chemistry, **photolabile protecting groups**, and photolithography are used to achieve light-directed

spatially-addressable parallel chemical **synthesis**. Binary masking techniques are utilized in one embodiment. A reactor system, photoremovable protective groups, and improved data collection and handling techniques are also disclosed. A technique for screening linker molecules is also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 45 OF 52 USPATFULL on STN
AN 1998:44847 USPATFULL
TI **Photolabile nucleoside protecting groups**
IN Fodor, Stephen P. A., Palo Alto, CA, United States
Stryer, Lubert, Stanford, CA, United States
Winkler, James L., Palo Alto, CA, United States
Holmes, Christopher P., Sunnyvale, CA, United States
Solas, Dennis W., San Francisco, CA, United States
PA Affymax Technologies N.V., United Kingdom (non-U.S. corporation)
PI US 5744101 19980428
AI US 1995-388321 19950214 (8)
RLI Division of Ser. No. US 1990-624120, filed on 6 Dec 1990, now abandoned which is a continuation-in-part of Ser. No. US 1990-492462, filed on 7 Mar 1990, now patented, Pat. No. US 5143854 which is a continuation-in-part of Ser. No. US 1989-362901, filed on 7 Jun 1989, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Bhat, Nina
LREP Townsend & Townsend & Crew LLP
CLMN Number of Claims: 11
ECL Exemplary Claim: 1
DRWN 22 Drawing Figure(s); 17 Drawing Page(s)
LN.CNT 1834
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A synthetic strategy for the creation of large scale chemical diversity. Solid-phase chemistry, **photolabile protecting groups**, and photolithography are used to achieve light-directed spatially-addressable parallel chemical **synthesis**. Binary masking techniques are utilized in one embodiment. A reactor system, photoremovable protective groups, and improved data collection and handling techniques are also disclosed. A technique for screening linker molecules is also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

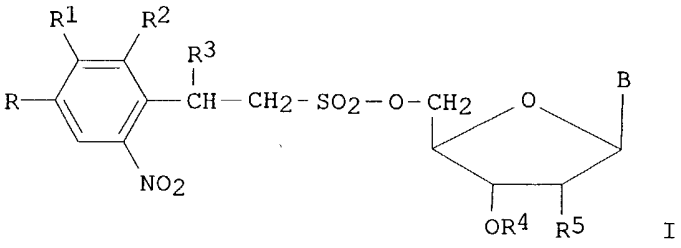
L9 ANSWER 46 OF 52 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN DUPLICATE 2
AN 1998:490467 BIOSIS
DN PREV199800490467
TI New **photolabile protecting groups** in **nucleoside** and nucleotide chemistry - **synthesis**, cleavage mechanisms and applications.
AU Giegrich, H.; Eisele-Buehler, S.; Hermann, C.; Kvasyuk, E.; Charubala, R.; Pfleiderer, W. [Reprint author]
CS Fak. Chemie, Univ. Konstanz, Postfach 5560, D-78434 Konstanz, Germany
SO Nucleosides and Nucleotides, (Sept.-Nov., 1998) Vol. 17, No. 9-11, pp. 1987-1996. print.
CODEN: NUNUD5. ISSN: 0732-8311.
DT Article
LA English
ED Entered STN: 18 Nov 1998
Last Updated on STN: 18 Nov 1998

AB New **photolabile protecting groups** have been found in the 2-(2nitrophenyl)ethoxycarbonyl and the 2-(2-nitrophenyl)ethylsulfonyl group, respectively. The influence of substituents at the phenyl ring as well as the side-chain has been investigated regarding the photolysis rates on irradiation at 365 mn. beta-Branching in the side-chain leads to highly increased rates of photodeprotection. A new type of photocleavage mechanism consisting of a photoinduced beta-elimination process is proposed.

L9 ANSWER 47 OF 52 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3
AN 1997:790132 CAPLUS
DN 128:13405
TI Preparation of **nucleoside** derivatives with a photo-labile protecting group for oligonucleotide **synthesis**
IN Pfleiderer, Wolfgang; Eisele, Sigrid
PA Pfleiderer, Wolfgang, Germany
SO Ger. Offen., 18 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 19620170	A1	19971127	DE 1996-19620170	19960520
	CA 2254065	AA	19971127	CA 1997-2254065	19970502
	WO 9744345	A1	19971127	WO 1997-EP2257	19970502
	W: AU, BR, CA, CZ, HU, IL, JP, KR, MX, NO, PL, SK, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	AU 9728904	A1	19971209	AU 1997-28904	19970502
	AU 711814	B2	19991021		
	EP 901501	A1	19990317	EP 1997-922946	19970502
	EP 901501	B1	20011017		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2000514404	T2	20001031	JP 1997-541454	19970502
	AT 207077	E	20011115	AT 1997-922946	19970502
	ES 2166081	T3	20020401	ES 1997-922946	19970502
	US 6153744	A	20001128	US 1998-193087	19981116
PRAI	DE 1996-19620170	A	19960520		
	WO 1997-EP2257	W	19970502		

OS MARPAT 128:13405
GI



I

AB Compds. of the invention [I; R = H, NO2, CN, OMe, halogen, alkyl or alkoxyalkyl; R1 = H, OMe; R2 = H, F. Cl, Br, NO2, or aliphatic acyl group; R3 = H, halogen, OMe, alkyl, or substituted aryl group; R4 = H, protecting group; R5 = H, OH, halogen, XR6; X = O, S; R6 = protecting group; B = adenine, cytosine, guanine, thymine, uracil, 2,6-diamino-purin-9-yl, hypoxanthin-9-yl, 5-methylcytosin-1-yl, 5-amino-4-imidazolcarbonylamid-1-yl, or 5-amino-4-imidazolcarbonylacid-3-yl; in the case of adenine,

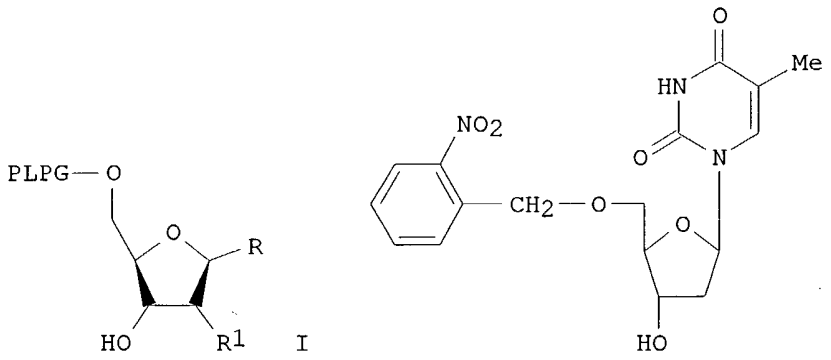
cytosine, or guanine, the primary amino function is protected]. These derivs. can be used for **synthesis** of oligonucleotides by cleavage of the **photolabile protecting group** . Thus, N6-[O2N-4-C6H4-CH2CH2OCO-]-5'-O-[2-(O2N-2-C6H4)CH2CH2SO2-]-2'-deoxyadenosine was prepared from N6-protected adenosine and 2-(2-chloro-6-nitrophenyl)ethylsulfonyl chloride (preparation given), which showed t1/2 = 21 min. for photo-deprotection.

L9 ANSWER 48 OF 52 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN DUPLICATE 4
AN 1997:199216 BIOSIS
DN PREV199799498419
TI **Photolabile protecting groups** for **nucleosides: Synthesis** and photodeprotection rates.
AU Hasan, Ahmad [Reprint author]; Stengele, Klaus-Peter; Giegrich, Heiner; Cornwell, Paul; Isham, Kenneth R.; Sachleben, Richard A.; Pfleiderer, Wolfgang; Foote, Robert S.
CS Dep. Chem., Duke Univ., Durham, NC 27708, USA
SO Tetrahedron, (1997) Vol. 53, No. 12, pp. 4247-4264.
CODEN: TETRAB. ISSN: 0040-4020.
DT Article
LA English
ED Entered STN: 12 May 1997
Last Updated on STN: 12 May 1997
AB o-Nitrobenzyloxycarbonyl and a number of related groups have been tested for the **photolabile** protection of **nucleoside** 5'-hydroxyls. The rates of photodeprotection were found to vary by approximately 17-fold in a series of 5'-O-protected thymidine derivatives irradiated at 365 nm under identical conditions. The homologous 2-(o-nitrophenyl)ethoxycarbonyl group and its derivatives were found to be removed approximately 2-fold faster than the corresponding o-nitrobenzyloxycarbonyl group, possibly due to an increased rate of alpha-hydrogen abstraction by the photo-excited nitro group. Photolysis rates were affected by substitutions on both the phenyl ring and alpha-carbon, with the strongest rate enhancements caused by the presence of a methyl or second o-nitrophenyl group in the alpha-position. Among the ring-substituted derivatives studied, o-nitro and o-iodo had the strongest enhancement effects on photodeprotection, while an o-fluoro group reduced the rate of photodeprotection. In general, substitutions at other positions on the phenyl ring had less effect on photolysis rates.

L9 ANSWER 49 OF 52 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 5
AN 1996:610224 CAPLUS
DN 125:301495
TI Preparation of **nucleosides** with 5'-O-**photolabile protecting groups** for microscale solid-state arrays
IN Foote, Robert S.; Sachleben, Richard A.
PA USA
SO U.S., 19 pp., Cont. of U.S. Ser. No. 117,183,abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5556961	A	19960917	US 1994-328079	19941024
PRAI	US 1991-794723		19911115		
	US 1993-117783		19930907		

OS MARPAT 125:301495
GI



AB The title compds. [I; R = a purine or pyrimidine group; R1 = H, OH; PLPG = a **photolabile protecting group** containing an o-nitrobenzyl moiety and a H atom on the α-C atom to the moiety, preferably 2-nitrobenzyl, 2-nitrobenzyloxycarbonyl, or 6-nitroveratryloxycarbonyl], e.g. 5'-O-(o-nitrobenzyl)thymidine (II), which are useful in the **synthesis** of nucleic acids on microscale solid-state arrays by the photolithog. method, are prepared

L9 ANSWER 50 OF 52 USPATFULL on STN
AN 96:11222 USPATFULL
TI **Photolabile nucleoside** and peptide **protecting groups**
IN Fodor, Stephen P. A., Palo Alto, CA, United States
Stryer, Lubert, Stanford, CA, United States
Winkler, James L., Palo Alto, CA, United States
Holmes, Christopher P., Sunnyvale, CA, United States
Solas, Dennis W., San Francisco, CA, United States
PA Affymax Technologies N.V., Curaco, Netherlands (non-U.S. corporation)
PI US 5489678 19960206
AI US 1995-390272 19950216 (8)
RLI Continuation of Ser. No. US 1990-624120, filed on 6 Dec 1990, now abandoned which is a continuation-in-part of Ser. No. US 1990-492462, filed on 7 Mar 1990, now patented, Pat. No. US 5143854 which is a continuation-in-part of Ser. No. US 1989-362901, filed on 7 Jun 1989, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Jones, W. Gary; Assistant Examiner: Schreiber, David
LREP Townsend and Townsend and Crew
CLMN Number of Claims: 35
ECL Exemplary Claim: 1
DRWN 22 Drawing Figure(s); 17 Drawing Page(s)
LN.CNT 1796
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A synthetic strategy for the creation of large scale chemical diversity. Solid-phase chemistry, **photolabile protecting groups**, and photolithography are used to achieve light-directed spatially-addressable parallel chemical **synthesis**. Binary masking techniques are utilized in one embodiment. A reactor system, photoremovable protective groups, and improved data collection and handling techniques are also disclosed. A technique for screening linker molecules is also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L9 ANSWER 51 OF 52 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:925980 CAPLUS

TI Photolithography and biopolymer **synthesis**.
AU Fodor, Stephen P. A.
CS Affymetrix, Inc., Santa Clara, CA, 95051, USA
SO Book of Abstracts, 210th ACS National Meeting, Chicago, IL, August 20-24 (1995), Issue Pt. 2, PMSE-224 Publisher: American Chemical Society, Washington, D. C.
CODEN: 61XGAC
DT Conference; Meeting Abstract
LA English
AB Photolithog. has been combined with solid-phase chemical **synthesis** to fabricate high-d., spatially addressable arrays of biopolymers. The **synthesis** takes place on a solid support. Light is used to selectively activate areas of the support by removal of **photolabile protecting groups**. After photochem. deprotection, monomer building blocks (such as amino acids or **nucleosides**, each bearing **photolabile protecting groups**) are added, and the cycle is repeated. Because light is used to direct the chemical **synthesis**, one may take advantage of complex patterns of illumination to define the chemical products and their locations. Efficient combinatorial **synthesis** strategies have been developed to maximize the number of compds. formed in the fewest number of chemical steps. These techniques enable the in situ **synthesis** of chemical compds. on a microscale. The method can be used to synthesize high-d. arrays of peptides, for example, which can be used to explore biol. recognition processes. Recent expts. with oligonucleotide arrays demonstrate that these arrays can be used to detect complementary sequences of DNA. The oligonucleotide arrays may be particularly valuable in gene mapping, fingerprinting, diagnostics, and nucleic acid sequencing.

L9 ANSWER 52 OF 52 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 1975:176269 BIOSIS
DN PREV197560006265; BA60:6265
TI 1-STEP CHEMICAL **SYNTHESIS** OF RIBO **NUCLEOSIDES** BEARING A **PHOTOLABILE** ETHER **PROTECTING GROUP**.
AU BARTHOLOMEW D G; BROOM A D
SO Journal of the Chemical Society Chemical Communications, (1975) No. 2, pp. 38.
CODEN: JCCCAT. ISSN: 0022-4936.
DT Article
FS BA
LA Unavailable